UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
Forest Insect and Disease Management
P.O. Box 5895, Asheville, N.C. 28803

REPLY TO: 5200 July 20, 1976

SUBJECT: Ocala Seed Orchard Evaluation

TO: Benjamin F. Finison, Forest Supervisor
NF in Florida

ATTN: Duke Denny

INTRODUCTION

On June 10, 1976, Larry R. Barber and Steve Oak of the Asheville Field Office, Southeastern Area, State and Private Forestry, FI&DM made a survey of the Ocala Sand Pine Seed Orchard to determine the incidence of tip moth damage. Rhycionia sp. and other insect problems. This survey was an effort to closely monitor insect populations for potential problems on the newly created orchard.

The orchard is presently in the planting and establishment stage of its development with seed production several years away. At this time the primary concern is tree establishment and reducing insect attacks that may affect the tree's vigor thereby, increasing tree mortality.

The orchard contains 42 acres of sand pine, Pinus clausa (Chapm.) Vasey, Ocala race and is located near Ocala, Florida on the Ocala National Forest. The orchard is divided into 5 blocks (4 blocks of 500 trees and one partial block of 250 trees). All spaces in each block do not contain living trees as some ramets did not survive or were never planted.. Block one contains the most living trees, i.e. 450 or 90% of the maximum of 500 trees.

METHOD

The survey included 100% of all living trees in block 1. Data were summarized for each ramet of every clone to include tip moth infested terminal, tip moth infested laterals (1-4), aphids, deer brouse and scale insects present.

Block 1 was thought to be representative of the other blocks and contained the most complete selection of clones and ramets on the orchard.

RESULTS

Table 1, lists the percent tip moth infestation of terminals and top 4 laterals and percent of trees with aphids, pine tortoise scale, Toumeyella numismatica (P. & McD.) and deer brouse by clone in block one of the Ocala Sand Pine Seed Orchard. Tip moth infestation on the terminals was 15.2% while 8.7% of the next 4 laterals were infested.

Aphids and pine tortoise scale infestation rates were 38.9% and 5.2% respectively. Only 1% of the trees were damaged by deer.

Pitch eating weevil adults, Pachylobius picivorus (Germ.) were found on the foliage and tree stems.

DISCUSSION

Tip moth infestation, Rhycionia sp., is presently the primary concern of this seed orchard. Possible "damage consists of retardation of height growth, the crooking or forking of main stems, the reduction of cone crops and occasionally, the death of the tree", (Baker 1972).

Other studies by Burns 1966 and 1968 on sand pine forest tree plantings in west Florida indicate that trees of the Ocala race were not as resistant to insect and disease attack as the Choctawhatchee race. He also indicated that first year mortality was high in the Ocala race and that height growth losses due to tip moth maybe negligible.

Little other work has been done on sand pine under seed orchard conditions. As the trees become established there would be less justification for continued control of tip moth. However, until the trees are established, every effort must be made to increase the trees vigor by reducing insect attack.

Aphids and pine tortoise scales suck plant juices and may be a factor in reducing plant vigor. Heavy tortoise scale populations may result in considerable branch mortality or death of the tree (Baker 1972).

The Francis Marion Seed Orchard has experienced mortality of shortleaf pine due to heavy tortoise scale infestations. Seed orchard and pest management personnel must be on the look out for the spread or population increase of this insect.

Adults of the pitch eating weevil were found on the foliage and bark of several seed orchard trees. The insects are being attracted to the area because of the land clearing operation on the seed orchard. Damage is often serious in recently cut pine stands where seedlings are planted soon after harvest. The adults are attached to and breed beneath the bark of dying pine stumps or roots. Damage is caused by adults feeding on the bark and twigs of seedlings planted near freshly cut stumps. It is reported that little feeding occurs in July or August with heaviest attacks occurring in the spring.

If seed orchard trees are to be planted next spring in the area now being cleared, or if any bark feeding is observed on seed orchard trees, please contact Larry Barber.

RECOMMENDATIONS

Control for tip moth should continue this summer with Cygon(R) 2-E sprays as recommended in the letter of April 29, 1976. However, to achieve maximum effectiveness, the spray has to be timed to coincide with external shoot migrations on early instar of each moth generation. This can be done by determining peak moth activity and spraying about 7-10 days later. Thorough coverage of the tips is of course essential.

Tortoise scale populations will be monitored by Larry Barber to determine if the insect populations are increasing and if they are spreading throughout the seed orchard. An additional survey for tortoise scale will be conducted in October or November. Insect control for scale is not recommended at this time.

In addition, no control recommendations for aphids are warranted. Predators and parasites continue to keep the aphid population down.

All slash now being removed in the clearing operation should either be burned or removed from the orchard.

If there are any questions, please contact Larry Barber at the Asheville Field Office.

ROBERT D. WOLFE
Field Representative
FI&DM

Encl.

cc: Yasinski
Hertel
Barber

Literature Cited

1. Baker, W.L., 1972. Eastern Forest Insects, Publication No. 1175, 364.

2. Burns, R.M., 1966. Tip Moth in the Sandhills. Forest Farmer 26: 12, 14.

3. Burns, R.M., 1968. Sand Pine: A Tree of West Florida's Dandhills. J. Forestry. 66: 561-562.

TABLE 1 - Percent tip moth infestation of terminals and top 4 laterals and percent trees with aphids, pine tortoise scale and deer brouse by clone in block one of the Ocala Seed Orchard.

Clone	Terminal Infested	Laterals Infested (1-4)	Aphids	Deer Brouse	Pine Tortoise Scale
1	22.2	19.4	88.9		
2		10	30		20
3	10	10	20	10	20
4	22.2	22.2			11.1
5		7.5	70		
6	10	10	50		20
7		5.6	11.1		
8	11.1	2.8	22.2		
9	10	2.5	40		
10	11.1	1.1	44.4		11.1
11	10	5	60		
12	*				
13	40		50		
14	10	12.5	60		
15	11.1	30.5	11.1		
16	10	7.5	50		10
17	30	15	20		
18	12.5	6.3	25		12.5
19	10	7.5	20		
20		7.1	28.6		
21	20	7.5	40	10	10
22		3.1	12.5		
23	11.1	2.8	33.3		
24	11.1				
25	20	7.5	50		

Clone	Terminal Infested	Laterals Infested (1-4)	Aphids	Deer Brouse	Tortoise Scale
26	30	20	40	10	
27	30	7.5	40		
28	40	12.5	30		
29	40	7.5	40	10	10
30	28.6		14.3		
31	20	17.5	70		10
32	12.5	6.3	62.5		12.5
33	20	10	60		
34		3.1	37.5		
35			60		20
36	*				
37	*				
38			70		
39	30	7.5	20		30
40	11.1	5.6	55.6		
41	28.6				
42	14.3	7.1	28.6		14.3
43	10	12.5	50		
44		7.4	50		
45	10	5	40		10
46	22.2	8.3	33.3		
47	20	2.5	10	10	20
48	10	17.5	40		
49	33.3	8.3	10		
50	10	15	70		
Average	15.2%	8.7%	38.9%	1%	5.2%

* Clone was either not planted or no representive members survived.